DOCUMENT RESUME

ED 456 877 JC 010 604

TITLE	Tidewater Community College Distance Learning Report.
INSTITUTION	Tidewater Community Coll., Norfolk, VA.
PUB DATE	2001-04-00
NOTE	27p.; Produced by Tidewater Community College, Office of Institutional Effectiveness. Some text may not reproduce well.
AVAILABLE FROM	For full text: http://www.tc.cc.va.us.
PUB TYPE	Numerical/Quantitative Data (110) -- Reports - Research (143) -- Tests/Questionnaires (160)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Access to Education; Community Colleges; *Distance Education; Enrollment Rate; Grade Point Average; Internet; *Nontraditional Education; *Online Courses; Program Evaluation; School Holding Power; Student Financial Aid; *Telecourses; Two Year Colleges
IDENTIFIERS	*Tidewater Community College VA

ABSTRACT

This study of distance learning at Tidewater Community College (TCC) was conducted to determine enrollment patterns, retention, and success in distance learning courses and student perceptions. Distance learning was defined as students enrolled in one of three modes of course delivery: telecourse, online, and compressed video. The time frame for the study spanned summer 1998 to spring 2000. Highlights include: (1) a greater percentage of whites (70%) and females (69%) enrolled in distance learning courses, compared with TCC's overall student population; (2) online course enrollments increased from eight sections and 146 students in summer 1998 to 37 sections and 1,014 students in spring 2000; (3) for all modes of distance learning, the majority of students learned about the course via the class schedule; (4) the overall retention rate of distance learning students was 66%, while the overall rate was 65% for new students enrolling in fall 99 and returning in spring 2000; and (5) compressed video students had a success rate (grade of A, B, or C), while both online and telecourses had a success rate of 61%; overall TCC success rate is 74% for all college-level courses. (Includes 14 tables and six appendices.) (NB)

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Tidewater Community College

DISTANCE LEARNING REPORT

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TIDEWATER COMMUNITY COLLEGE

DISTANCE LEARNING REPORT

Office of Institutional Effectiveness
Tidewater Community College
121 College Place
Norfolk VA 23510

April 2001

TABLE OF CONTENTS

Introduction ____ 1

Survey Process ____ 1

Demographic Information ____ 2

Enrollment Patterns in Distance Learning Courses ____ 3

Reasons for Enrolling in Distance Learning Courses ____ 5

Retention of Distance Learning Students ____ 5

Success Rates for Distance Learning Courses ____ 6

Performance and Re-Enrollment in Course Sequences ____ 10

Student Perceptions of Distance Learning Courses ____ 13

Summary ____ 16

Appendix A: Compressed Video Distance Learning Student Survey ____ 17

Appendix B: On-Line/Internet Distance Learning Student Survey ____ 18

Appendix C: Telecourse Distance Learning Student Survey – Summer 1998/Spring 1999 ____ 19

Appendix D: Telecourse Distance Learning Student Survey – Fall 1999 ____ 20

Appendix E: Demographic Information for Students Enrolled in Distance Learning Courses ____ 21

Appendix F: Number of Enrollments by Delivery Mode ____ 22

TCC DISTANCE LEARNING REPORT

EXECUTIVE SUMMARY

A study of distance learning was conducted to determine enrollment patterns, retention, success in distance learning courses and the corresponding sequence courses, and student perceptions. Distance learning was defined as students enrolled in one of three modes of course delivery: telecourse, on-line, and compressed video. The time frame for the study spans summer 1998 to spring 2000. Highlights of the study are provided below.

- A greater percentage of Caucasians (70%) and females (69%) enrolled in distance learning courses compared to TCC's overall student population. The majority (57%) was enrolled in college transfer programs (AA, AS).

- On-line course enrollments have shown the most dramatic enrollment increase from 8 sections and 146 students in summer 1998 to 37 sections and 1014 students in spring 2000.

- For all modes of distance learning, the majority of students learned about their course of enrollment via the class schedule. Students tended to enroll in compressed video courses because it was the only course section available, while on-line and telecourse students cited scheduling conflicts and other responsibilities as the primary reason for enrolling.

- The overall retention rate of distance learning students was 66% and compared favorably to the overall college retention rate of 65% for new students enrolled in fall 99 and returning spring 00.

- When defining success as a grade of A, B, or C, compressed video students had a 92% success rate, and both on-line and telecourse students had a 61% success rate. The overall TCC success rate is 74% for all college level courses.

- For on-line and telecourse students the relationship between previous GPA and course success appears to be stronger than the relationship between prior credit hours and success. However, there appears to be no relationship between prior GPA and performance in compressed video courses.

- Students who successfully completed the first course of a sequence in a distance learning course were well prepared for success in the second course of the sequence. In fact, for English 112 and History 102, a higher percentage of students who completed the first course of the sequence as a distance learning course was successful when compared to students completing the first course in a traditional classroom setting.

- On-line students felt there was more opportunity for discussion, and they were more likely to actually participate as compared to a traditional classroom. However, on-line students felt less a part of a class.

- Telecourse students felt there was less opportunity for discussion and they were less likely to feel like part of a class.

- The great majority of students indicated they would enroll in another course delivered via the same mode: compressed video—93%, on-line—83%, and telecourse—79%.

DISTANCE LEARNING REPORT

INTRODUCTION

Tidewater Community College (TCC) defines distance learning as a "formal educational process in which the majority of the instruction occurs when student and instructor are not in the same place." Three modes of distance learning are offered at TCC: compressed video, on-line, and telecourse. Compressed video is an interactive form of distance learning where the college sends and receives courses through its compressed video network. On-line instruction also is an interactive form of distance learning where courses are offered on the Internet. Telecourses can be viewed on or off campus and represent a non-interactive form of distance learning. Telecourses include two to four scheduled class meetings during the semester.

Integral to TCC's mission of a comprehensive strategic community college is a commitment to offering learning environments and delivery methods that are varied and flexible. With the growing popularity of distance education, assessment of these forms of instruction is crucial to ensure a positive and beneficial learning experience for students. In order to assess distance education at TCC, students in all modes of distance learning courses were surveyed beginning in the summer 1998 semester. Specific modes of distance learning were assessed during various semesters. Students enrolled in compressed video courses were surveyed during fall 1998 and spring 1999, students enrolled in on-line courses were surveyed during summer 1998 and spring 1999, and students enrolled in telecourses were surveyed during summer 1998, fall 1999, and spring 1999. Along with information about student perceptions, data concerning enrollment patterns, success in distance learning courses, and tracking performance of students who enrolled in distance learning courses was collected.

This report addresses several issues surrounding distance education. First, the report examines the demographics of students who have enrolled in distance learning courses. Enrollment patterns in the compressed video courses, on-line courses, and telecourses are presented beginning with the summer 1998 semester. Students' reasons for enrolling in distance learning courses also are addressed. Second, retention of distance learning students is examined for comparison to overall retention patterns at TCC. Third, performance in distance learning courses is analyzed, and performance in subsequent courses is tracked to determine how distance learning courses prepare students for their future coursework. Finally, students' perceptions of their distance learning experience is presented. This includes the students' perceptions about the academic benefits and disadvantages of distance education and students' suggestions for improvement of the distance learning experience.

SURVEY PROCESS

Surveys were developed for each distance learning mode. All surveys are included in Appendices A, B, C, and D. In addition to specific questions about the distance learning mode, all students were asked to indicate what they liked most about taking the course, what they liked least about taking the course, and the suggestions they had for improvement.

The first effort to survey students in distance learning courses was during summer 1998. Distance Learning Surveys were mailed to all students in compressed video courses, on-line courses, and telecourses at TCC. Of the 622 surveys that were mailed, 177 (28%) surveys were completed and returned. Twenty-eight percent (28%) of telecourse surveys were returned, and 33% of on-line course surveys were returned. No compressed video surveys were returned. During the fall 1998 semester, another attempt was made to survey students enrolled in compressed video courses. Surveys were distributed to compressed video faculty to administer and collect. Of the 55 compressed video surveys distributed, 44 (80%) course surveys were returned. During the spring 1999 semester, students enrolled in all modes of distance learning were surveyed again. Responses from 129 telecourse students, 74 on-line course students, and 34 compressed video course students were received. The

telecourse survey was revised during the fall 1999 semester, and students were surveyed a third time. The revised survey is included in Appendix D. Of the 549 surveys that were mailed to students enrolled in telecourses, 97 (18%) surveys were returned.

DEMOGRAPHIC INFORMATION

Demographic information for students enrolled in distance learning courses was collected using TCC's Student Information System. A summary of the demographic data for students enrolled in distance learning courses from summer 1998 to spring 2000 suggests that the majority of students was Caucasian and female. Generally, the largest percentage of students enrolled in distance learning courses was between the ages of 25 and 31. However, the percentage of younger students (ages 16 to 24) enrolled in these courses has been increasing since summer 1998. The classification of the majority of students was freshman standing in the Associate in Arts (AA) or Associate in Science (AS) degree programs. Nearly one half of distance learning students received financial aid while the other half did not. A table tracking demographic information from summer 1998 to spring 2000 is included in Appendix E.

A comparison of demographic information for distance learning students and TCC's total student population is presented in Table 1. An examination of the data shows that there is a greater percentage of Caucasians and females enrolled in distance learning courses compared to TCC's overall student population. Also, distance learning students are somewhat more likely to be enrolled in an AA or AS program and less likely to be unclassified compared to TCC's overall student population.

TABLE 1

Fall 1999 Demographic Information for Distance Learning Students and TCC Overall

	Distance Learning		TCC Overall*	
	#	%	#	%
RACE				
Caucasian	763	69.9	12289	61.9
African-American	240	22.0	5194	26.2
Other	89	8.1	2364	11.9
SEX				
Male	337	30.9	8485	42.8
Female	755	69.1	11362	57.3
CLASSIFICATION				
AA/AS	620	56.8	9659	48.7
AAS	235	21.5	4480	22.6
Certificate	85	7.8	1490	7.5
Diploma	3	.3	3	.02
Unclassified	149	13.6	4215	21.2
TOTAL	1092		19847	

*Overall TCC figures are based on data presented in TCC's 2000 Factbook.

Students who enrolled in distance learning courses were enrolled in a variety of curricula within the college. However, the most popular curricula across semesters were business administration, computer science, education/social sciences, general studies, and courses taken for personal satisfaction. Table 2 tracks the curricula in which the largest percentage of distance learning students has been enrolled.

TABLE 2

Largest Curricula Enrollments for Distance Learning Students

	Sum 98		Fall 98		Spring 99		Sum 99		Fall 99		Spring 00	
	#	%	#	%	#	%	#	%	#	%	#	%
CURRICULA												
Business Admin.	0	0.0	93	12.2	116	12.0	76	10.2	128	11.7	162	13.2
Computer Science	69	10.8	88	11.6	94	9.8	69	9.2	99	9.1	128	10.4
Education/Social Science	80	12.6	80	10.5	116	12.0	72	9.6	115	10.5	104	8.5
General Studies	85	13.4	144	18.9	181	18.8	125	16.7	214	19.6	233	19.0
Personal Satisfaction	69	10.8	64	8.4	94	9.8	91	12.2	87	8.0	92	7.5

ENROLLMENT PATTERNS IN DISTANCE LEARNING COURSES

Compressed Video

During the summer 1998 semester, TCC offered one course in diagnostic medical sonography (DMS) using the compressed video format. Since summer 1998, courses in fire science (FIR), human services (HMS), health (HLT), and health information technology (HIT) have been added. The largest number of compressed video sections offered was 8 in the fall 1999 semester.

Figure 1 presents enrollments in compressed video courses from summer 1998 to spring 2000. The data are organized by semester for comparison. Enrollments in compressed video courses increased from the summer 1998 semester to the summer 1999 semester and also from the fall 1998 semester to the fall 1999 semester. However, spring 1999 and spring 2000 enrollments were similar. A table detailing enrollments in compressed video courses from summer 1998 to spring 2000 by discipline is included in Appendix F.

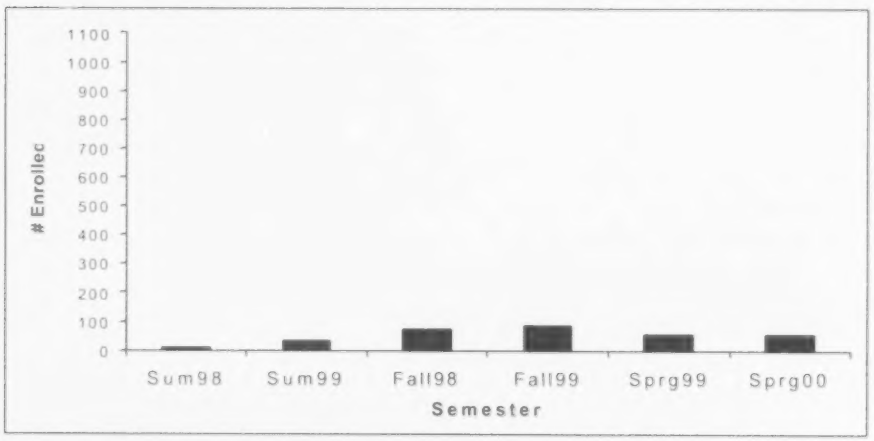

FIGURE 1: Compressed Video Enrollment Patterns

On-Line Courses

Since summer 1998, the number of on-line course offerings has expanded from 4 discipline areas to 15 discipline areas. The number of on-line course sections showed the greatest increase between comparable semesters. For example, 8 sections were offered in summer 1998 compared to 16 sections in summer 1999. Thirteen (13) sections were offered in fall 1998 compared to 31 sections in fall 1999. Finally, 20 sections were offered in spring 1999 with an increase to 37 sections offered in spring 2000.

Similarly, on-line course enrollments have shown a great increase between comparable semesters. As shown in Figure 2, on-line enrollments more than doubled from summer 1998 to summer 1999, from fall 1998 to fall 1999, and from spring 1999 to spring 2000. A table detailing enrollments in on-line courses from summer 1998 to spring 2000 by discipline is included in Appendix F.

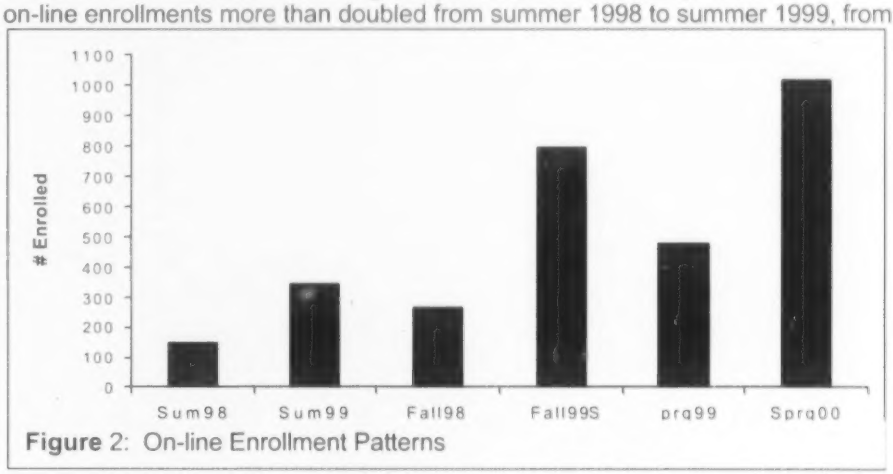

Figure 2: On-line Enrollment Patterns

Telecourses

TCC offered telecourses in economics, English, history, psychology, and sociology each semester. Overall, history courses had the largest enrollments. The number of telecourse sections offered each semester remained relatively stable, ranging from 15 sections offered in summer 1999 to 19 sections offered in spring 1999.

Figure 3 displays the number of telecourse enrollments from summer 1998 to spring 2000. Enrollment in telecourses decreased from the summer 1998 semester to the summer 1999 semester. Similarly, enrollments for fall 1999 decreased compared to fall 1998, and spring 2000 enrollments decreased compared to spring 1999. A table detailing telecourse enrollments from summer 1998 to spring 2000 by discipline is included in Appendix F.

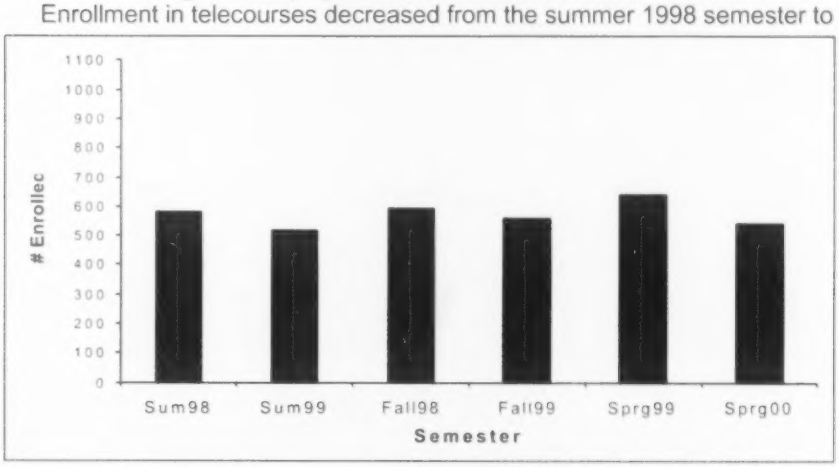

Figure 3: Telecourse Enrollment Patterns

In summary, enrollments in distance learning courses have increased since summer 1998. However, this increase is mainly a result of the increase in the number of on-line courses offered and the increase in enrollments in these on-line courses. Enrollments in compressed video courses have increased slightly or remained the same when comparable semesters were examined. Enrollments in telecourses have declined when comparable semesters were examined.

REASONS FOR ENROLLING IN DISTANCE LEARNING COURSES

Results from all surveys showed that the majority of students learned about the distance learning course in which they enrolled through the class schedule. This was the case regardless of the mode of the distance learning course. Overall, 58% of students who responded to the compressed video survey indicated that they learned of the course from the class schedule; this was also the case for the majority of on-line students (74%) and telecourse students (74%). Less than 20% of the respondents on all three surveys cited advisors or friends as important sources.

When students were asked why they chose to enroll in a distance learning course, responses varied depending on the mode of the distance learning course. For example, the majority of compressed video students (54%) indicated that they chose the course because it was the only course section that was available. The main reasons chosen by respondents for enrolling in on-line courses included course scheduling (28%, summer 1998) and other responsibilities (36%, spring 1999). Additionally, 28% of spring 1999 respondents indicated that they chose to enroll in the on-line course because they enjoyed working independently. Students who enrolled in telecourses indicated that they chose the course primarily because of scheduling conflicts or conflicts with other responsibilities.

RETENTION OF DISTANCE LEARNING STUDENTS

In order to examine retention of distance learning students, students who were enrolled in compressed video courses, on-line courses, and telecourses during the fall 1998 semester were tracked to determine if they re-enrolled during spring 1999. Similarly, distance learning students during fall 1999 were tracked to the spring 2000 semester. Table 3 displays the percentages of distance learning students who re-enrolled at TCC depending on the course mode.

TABLE 3

Retention of Distance Learning Students			
Course Mode*	**Fall 1998**	**Spring 1999**	**% of Students**
	# Enrolled	**# Enrolled**	**Returning**
Telecourse	518	326	62.9%
Compressed Video	31	26	83.9%
On-line	241	163	67.6%
Overall	761	496	65.2%
Course Mode*	**Fall 1999**	**Spring 2000**	**% of Students**
	# Enrolled	**# Enrolled**	**Returning**
Telecourse	466	330	70.8%
Compressed Video	59	35	59.3%
On-line	604	389	64.4%
Overall	1092	726	66.5%

*Unduplicated students in each category but not between categories. Overall figures represent unduplicated students enrolled in any distance learning mode.

The overall percentage of distance learning students returning is similar to the overall college retention rate. According to TCC's 1999 Factbook, 68% of new students enrolled in fall 1998 returned in spring 1999. TCC's 2000 Factbook indicated that 65% of new students enrolled in fall 1999 returned in spring 2000. Fall 1998 and fall 1999 students enrolled in telecourses and on-line courses were retained at similar rates. However, a greater percentage of fall 1998 compressed video students (84%)

returned for the spring 1999 semester, while students enrolled in fall 1999 compressed video courses had the lowest retention rate (59%). The variability in compressed video retention rates from one year to the next may be due to the fact that the compressed video courses are focused on the health science program of study where cohorts of students progress through the program. Classes for the program may or may not be offered in a fall to spring sequence, and this may influence whether or not students re-enrolled. Also, the relatively small number of students who enrolled in compressed video courses makes it difficult to draw conclusions from this data.

SUCCESS RATES FOR DISTANCE LEARNING COURSES

Examining success rates in distance learning courses and variables related to success is important if TCC aims to help students choose beneficial experiences. Success rates in distance learning courses may be related to several factors including the number of credit hours completed prior to enrolling in a distance learning course or the student's grade point average (GPA) prior to enrollment. Due to the independent study nature of distance learning courses, students with a greater number of completed credit hours prior to enrolling may perform better compared to students with fewer prior credit hours. Students with a greater number of earned credit hours may have had the opportunity to learn and practice effective study skills in previous courses which they could apply independently while completing a distance learning course. Similarly, students with higher GPA's may be more likely to succeed in distance learning courses compared to students with lower GPA's.

The examination of the relationship between success in distance learning courses and credit hours or GPA will focus on each mode of distance learning separately. Successful performance in a course was defined as earning an A, B, or C whereas unsuccessful performance was defined as earning a D, F, I, or W. Table 4 presents the aggregate success rates in each mode of distance learning from summer 1998 to spring 2000 as compared to the college's overall success rate for all TCC courses. While compressed video courses had a substantially higher success rate (92%) than the overall college average (74%), on-line and telecourse success rates were lower at 61% each.

TABLE 4

Success in Distance Learning Courses

Outcome	Distance Learning Rate		Overall TCC Rate**
	#	%	%
Comp. Video*			
Successful	289	92.0	74.0
Unsuccessful	25	8.0	74.0
On-line			
Successful	1795	60.7	74.0
Unsuccessful	1164	39.3	74.0
Telecourse			
Successful	2076	60.7	74.0
Unsuccessful	1346	39.3	74.0

*Only TCC's students who enrolled in compressed video courses are included.
** Excluded developmental courses and audit grades.

In order to examine the relationship between number of completed credit hours prior to enrollment and success in a distance learning course, prior credit hours were determined for students who were successful and unsuccessful.

Figures 4 through 6 illustrate the relationship between the number of completed credit hours and success in each type of distance learning mode. For students enrolled in compressed video courses, there seemed to be little relationship between completed credit hours and success in the course. According to Figure 4, at least 85% of the students in all credit categories were successful.

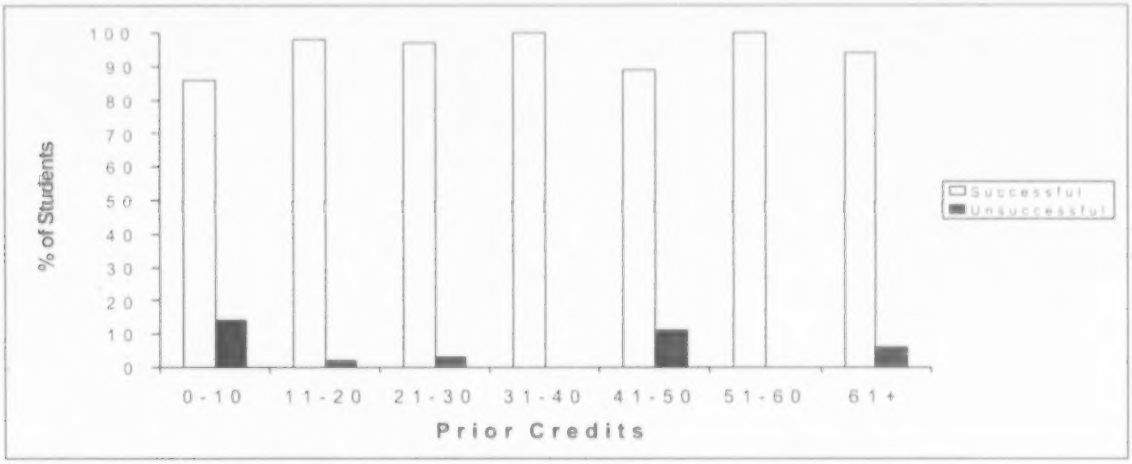

Figure 4: Credits Completed Prior to Enrollment in CV Course and Success in Course

Figure 5 displays data for on-line courses. The percentage of students who were successful increased slightly as completed credit hours increased to between 21 and 30. When 31 or more credit hours were completed, the percentage of students who were successful stabilized somewhat.

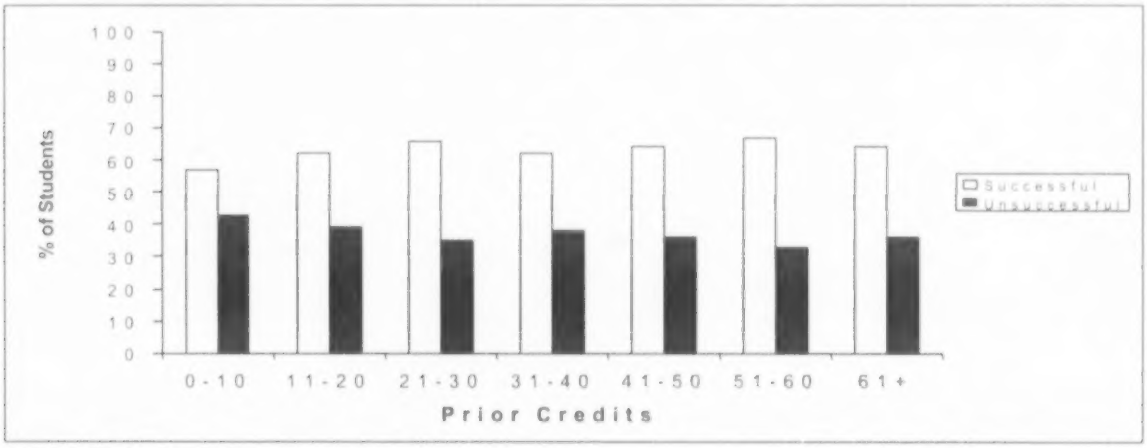

Figure 5: Credits Completed Prior to Enrollment in On-Line Course and Success in Course

Figure 6 shows a similar pattern for telecourse students; however, the pattern is slightly more pronounced. For students who completed between 0 and 10 credit hours, 55% were successful while 45% were unsuccessful. As the number of completed credit hours increased to 30, the percentage of students who succeeded increased, and the percentage of students who did not succeed decreased. The success rate in telecourses did not vary greatly when 31 or more credit hours were completed prior to the course.

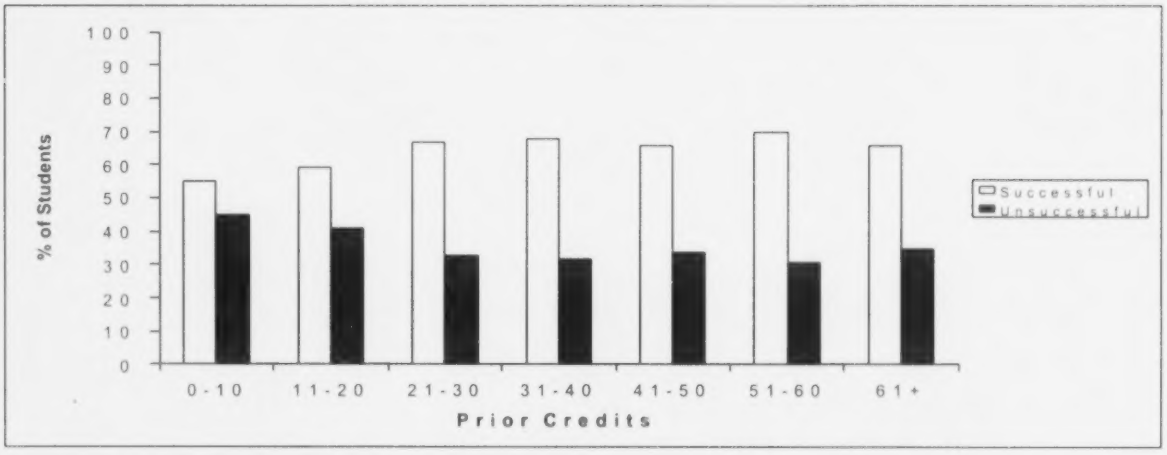

Figure 6: Credits Completed Prior to Enrollment Telecourse and Success in Course

The relationship between previous GPA and success in distance learning courses appeared to be stronger for on-line courses and telecourses. However, there appeared to be no relationship between prior GPA and performance in the compressed video courses. According to Figure 7, students in compressed video courses who had a GPA between 0 and 1.00 were equally likely to succeed or not succeed. In all other GPA categories, over 83% of students succeeded regardless of their GPA.

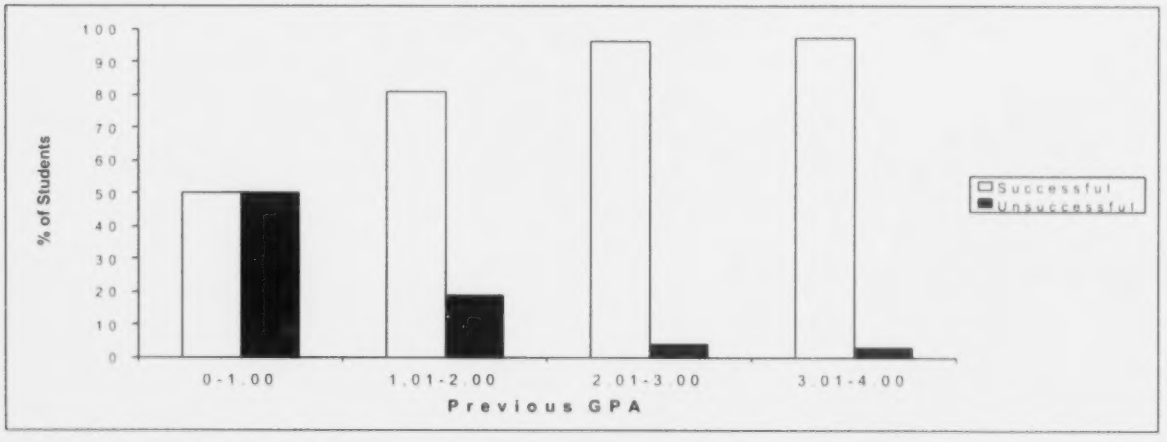

Figure 7: Previous GPA and Success in Compressed Video Courses

Figure 8 illustrates the relationship for students enrolled in on-line course. When the prior GPA was under 2.00, a greater percentage of students were unsuccessful in the on-line course. When the GPA was between 2.01 and 3.00, there was almost an equal chance of the students being successful or unsuccessful. However, when the GPA was above 3.00, 77% were successful and 23% were unsuccessful in the on-line course.

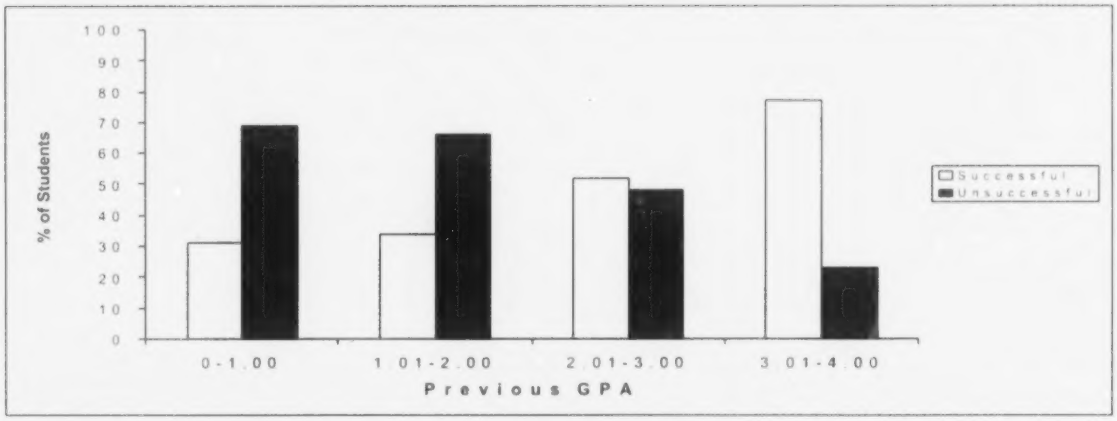

Figure 8: Previous GPA and Success in On-line Courses

A similar pattern is displayed in Figure 9 for telecourse students. When the student's GPA prior to taking the telecourse was between 0 and 1.00 or between 1.01 and 2.00, a greater percentage of these students was unsuccessful. However, when prior GPA was between 2.01 and 3.00, a greater percentage of students was successful. When prior GPA was above 3.00, 77% of students were successful while 23% were unsuccessful.

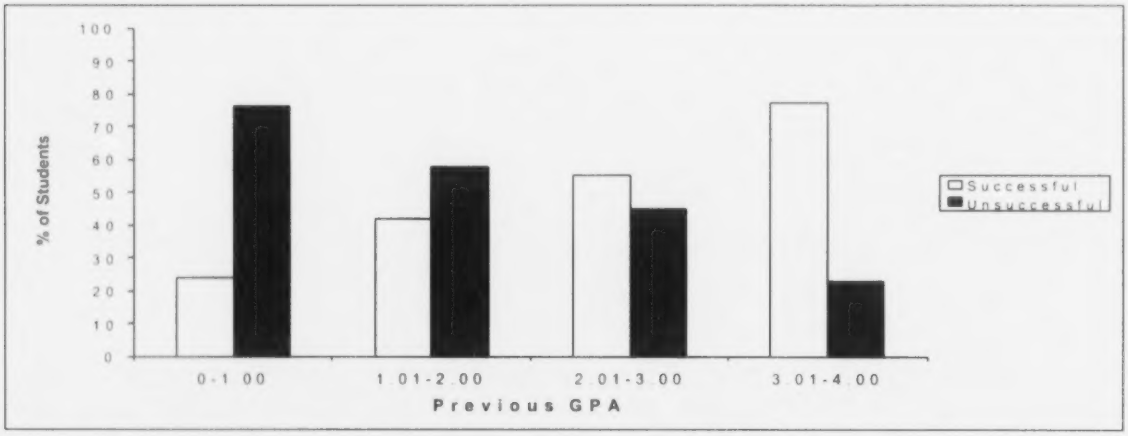

Figure 9: Previous GPA and Success in Telecourses

In summary, previous GPA showed a stronger relationship with performance in distance learning courses compared to the number of credit hours completed prior to enrolling in the course. Additionally, the relationships between success and GPA and success and the number of completed credit hours existed for students enrolled in telecourses and on-line courses. Students in compressed video courses succeeded regardless of their prior GPA or the number of credit hours they completed before enrolling. The results for the compressed video students may be due in part to the programmatic focus of compressed video courses or the relatively small sample of students.

PERFORMANCE AND RE-ENROLLMENT IN COURSE SEQUENCES

Several courses offered in a distance learning format are course sequences that students may complete during the academic year. The course sequences include English 111/English 112, History 101/History 102, and Psychology 201/Psychology 202. The following sections will highlight success rates in the courses and re-enrollment in the second course of the sequence depending on the mode of the prerequisite course. Further, performance in the second course of the sequence for students who completed the prerequisite course in a distance learning mode will be compared to the performance of students who completed the prerequisite course in the traditional classroom.

English

The examination of the English sequence combines students enrolled in English 111 in the fall 1998 and fall 1999 semesters who subsequently enrolled in English 112 in the spring 1999 and spring 2000 semesters, respectively. According to Table 5, the success rate in English 111 was higher for those who enrolled in the telecourse and traditional methods as compared to those who enrolled in the on-line mode of delivery. The success rate (grades of A, B, or C) was 82% for students enrolled in English 111 telecourses, 50% for students enrolled in English 111 on-line courses, and 70% for students enrolled in traditionally delivered English 111 courses. The re-enrollment rate in English 112 the following spring semester was 31% for students who enrolled in English 111 as a telecourse, 19% for students who enrolled in English 111 as an on-line course, and 43% for students who enrolled in English 111 in the classroom.

Table 5

Success Rate in ENG 111 and Re-enrollment in ENG 112 by ENG 111 Mode of Delivery

Mode	Success ENG 111	Re-enrollment ENG 112
Telecourse	82%	31%
On-Line	50%	19%
Traditional	70%	43%

The following tables display the numbers and percentages of students who were successful in English 112, given their success in English 111. Table 6 displays the performance of students who enrolled in English 111 as a distance learning course (telecourse or on-line), and Table 7 displays the performance of students who enrolled in English 111 as a traditionally delivered course.

Table 6

Success in ENG 112 Based on ENG 111 as D.L. Course

Success in ENG 111	Success in ENG 112		
	Successful	Unsuccessful	Total
Successful	46 (84%)	9 (16%)	55
Unsuccessful	2 (50%)	2 (50%)	4

Table 7
Success in ENG 112 Based on ENG 111 as Traditional Course

Success in ENG 111	Success in ENG 112		
	Successful	Unsuccessful	Total
Successful	1367 (77%)	410 (23%)	1777
Unsuccessful	43 (39%)	66 (61%)	109

As shown in the above tables, approximately 84% of students who were successful in a distance learning English 111 course were also successful in the English 112 course; this compares favorably to 77% of the traditional English 111 students who were also successful in English 112.

For English 112 students who enrolled in English 111 the previous fall semester, overall success rates were 71% for students enrolled in English 112 as a distance learning course and 75% for students enrolled in English 112 in a traditional classroom setting.

History

The examination of the history sequence combines students enrolled in History 101 in the fall 1998 and fall 1999 semesters who subsequently enrolled in History 102 in the spring 1999 and spring 2000 semesters, respectively. Table 8 illustrates that the performance in History 101 varied depending on the mode of the course delivery. The success rate (grades of A, B, or C) was 31% for students enrolled in History 101 telecourses, 49% for students enrolled in History 101 on-line courses, and 50% for students enrolled in traditionally delivered History 101 courses. The re-enrollment rate in History 102 the following spring semester was 13% for students who enrolled in History 101 telecourses, 11% for students who enrolled in History 101 on-line courses, and 22% for students who enrolled in History 101 in the classroom.

The following tables display the success rate of students who received various grades in History 102 given their success in History 101. Table 9 displays the performance of students who enrolled in History 101 as a distance learning course (telecourse or on-line), and Table 10 displays the performance of students who enrolled in History 101 as a traditionally delivered course.

Table 8
Success Rate in HIS 101 and Re-enrollment in HIS 102 by HIS 101 Mode of Delivery

Mode	Success HIS 101	Re-enrollment HIS 102
Telecourse	31%	13%
On-Line	49%	11%
Traditional	50%	22%

As shown in the adjacent tables, a larger percentage of students (75%) was successful in History 102 after successfully completing a distance learning History 101 course, as compared to the traditionally delivered HIS 101 course (62%). However, results should be interpreted with caution due to the small number of students in the sample.

Table 9
Success in HIS 102 Based on HIS 101 as D.L. Course

Success in HIS 101	Succes in HIS 102		
	Successful	Unsuccessful	Total
Successful	6 (75%)	2 (25%)	8
Unsuccessful	1 (25%)	3 (75%)	4

For History 102 students who enrolled in History 101 the previous fall semester, overall success rates were 55% for students enrolled in History 102 as a distance learning course and 59% for students enrolled in History 102 in a traditional classroom setting.

Table 10
Success in HIS 102 Based on HIS 101 as Traditional Course

Success in HIS 101	Success in HIS 102		
	Successful	Unsuccessful	Total
Successful	108 (62%)	66 (38%)	174
Unsuccessful	3 (19%)	13 (81%)	16

Psychology

The examination of the psychology sequence combines students enrolled in Psychology 201 in the fall 1998 and fall 1999 semesters who subsequently enrolled in Psychology 202 in the spring 1999 and spring 2000 semesters, respectively. Table 11 shows that overall, the performance in Psychology 201 varied depending on the mode of the course, in some cases by more than 35%. The success rate (grades of A, B, or C) was 47% for students enrolled in Psychology 201 telecourses, 74% for students enrolled in Psychology 201 on-line courses, and 68% for students enrolled in traditionally delivered Psychology 201 courses. The re-enrollment rate to Psychology 202 the following spring semester was 12% for students who enrolled in Psychology 201 as a telecourse, 10% for students who enrolled in Psychology 201 as an on-line course, and 16% for students who enrolled in Psychology 201 in the classroom. It should be noted that the nature of social sciences may have an impact on the low re-enrollment; in many cases, particularly for students intending to transfer, the students may be encouraged to enroll in a different social science elective rather than continuing in the same course sequence. Tables 12 and 13 illustrate the success of students who received various grades in Psychology 202 given their success in Psychology 201. Table 12 displays the performance of students who enrolled in Psychology 201 as a distance learning course (telecourse or on-line), and Table 13 displays the performance of students who enrolled in Psychology 201 as a traditionally delivered course.

Table 11
Success Rate in PSY 201 and Re-enrollment in PSY 202 by PSY 201 Mode of Delivery

Mode	Success PSY 201	Re-enrollment PSY 202
Telecourse	47%	12%
On-Line	74%	10%
Traditional	68%	16%

There was not much difference in the Psychology 202 success rate of students who successfully completed Psychology 201 as a distance learning course (82%) versus those who completed it as a traditional course (86%). Again, results should be interpreted with caution due to the small number of students in the sample.

Table 12
Success in PSY 202 Based on PSY 201 as D.L. Course

Success in PSY 201	Success in PSY 202		
	Successful	Unsuccessful	Total
Successful	18 (82%)	4 (18%)	22
Unsuccessful	1 (100%)	0 (–)	1

For Psychology 202 students who enrolled in Psychology 201 the previous fall semester, overall success rates were 82% for students enrolled in Psychology 202 as a distance learning course and 84% for students enrolled in Psychology 202 in a traditional classroom setting

Table 13
Success in PSY 202 Based on PSY 201 as Traditional Course

Success in PSY 201	Success in PSY 202		
	Successful	Unsuccessful	Total
Successful	296 (86%)	48 (14%)	344
Unsuccessful	14 (58%)	10 (42%)	24

In summary, students who successfully completed the first course in a sequence within a distance learning framework were well prepared for success in the second course of the sequence. In both English 112 and History 102, a higher percentage of students who completed the first course of the sequence as a distance learning course were successful compared to students completing the first course in a traditional classroom. Table 14 displays these percentages.

TABLE 14
Success in 2nd Course Based on Success in Distance Learning or Traditional Format for 1st Course

Course Sequence	% Successful in 2nd Course with Distance Learning 1st Course	% Successful in 2nd Course with Traditional 1st Course
English 111/112	83.6%	76.9%
History 101/102	75.0%	62.1%
Psychology 201/202	81.8%	86.0%

STUDENT PERCEPTIONS OF DISTANCE LEARNING COURSES

Students were asked to evaluate their experience in distance learning courses as it related to their academic development. Specifically, students evaluated their use of written communication, critical thinking, and motivation for learning. Students also evaluated the opportunities for discussion with faculty and students, their participation in discussion with faculty and students, and the degree to which they felt part of the class.

Compressed Video Courses

Students in compressed video courses were surveyed during fall 1998 and spring 1999. When asked to compare the use of written communication in compressed video courses and traditionally taught courses, 57% of fall 1998 respondents and 68% of spring 1999 respondents indicated that there was no difference in their use of written communication. Approximately one-third (36% and 32%) of both samples believed that they were more likely to use written communication in compressed video courses. In regard to the use of critical thinking, 50% of fall 1998 respondents and 44% of spring 1999 respondents felt that they were more likely to use critical thinking in compressed video courses compared to traditional courses. Most other respondents felt that there was no difference in the likelihood of using critical thinking skills. The majority of students felt that there was no difference in their motivation to learn course content while enrolled in the compressed video course compared to traditional courses (57% for fall 1998 and 62% for spring 1999). In fact, approximately 39% of both samples felt that they were more likely to be motivated to learn course content in compressed video courses compared to traditional courses. Compressed video students were the most likely to indicate that they would enroll in another distance learning course of the same type. Ninety-three percent (93%) of students who responded would enroll in another compressed video course.

On-Line Courses

Students enrolled in on-line courses were surveyed in summer 1998 and spring 1999. When asked to compare their use of written communication in on-line courses to traditionally delivered courses, 68% of both samples responded that they were more likely to use written communication in the on-line courses. When asked to compare their use of critical thinking, approximately 62% of respondents in both samples indicated that they were more likely to use critical thinking in on-line courses compared to traditional courses. Concerning the students' motivation to learn course content, 53% of summer 1998 respondents and 42% of spring 1999 respondents indicated that there was no difference in their motivation to learn in on-line courses compared to traditional courses. In fact, 36% of summer 1998 respondents and 39% of spring 1999 respondents indicated that they were more likely to be motivated in on-line courses compared to traditional courses. Overall, students enrolled in on-line courses were satisfied with their experience, and 83% indicated that they would enroll in another on-line course.

Telecourses

Telecourse surveys were mailed in summer 1998, spring 1999, and fall 1999. The fall 1999 survey was revised after concerns were raised about comparing specific telecourses to traditionally delivered courses in general. As a result, survey responses from fall 1999 are not directly comparable to responses from summer 1998 or spring 1999. In the summer 1998 and spring 1999 surveys, students were asked to compare their use of written communication in telecourses and traditional courses. Approximately 47% of both samples indicated that there was no difference in their use of written communication. Most other students (43% for summer 1998 and 48% for spring 1999) indicated that they were more likely to use written communication in telecourses. The majority of fall 1999 students rated their experience using written communication in the telecourse as good (52%) or excellent (28%). Critical thinking was more likely to be used in telecourses according to approximately 50% of both summer 1998 and spring 1999 respondents. Most other students indicated that there was no difference in the use of critical thinking when comparing telecourses to other traditionally delivered courses (46% for summer 1998 and 48% for spring 1999). When fall 1999 students were asked to evaluate their experience using critical thinking in the telecourses, 55% indicated that it was good, and 32% indicated that it was excellent. When asked about the difference in motivation for learning course content, over one-half of students (54% for summer 1998 and 52% for spring 1999) indicated that there was no difference in motivation when comparing telecourses and traditional courses. In fact, 32% of summer 1998 students and 40% of spring 1999 students felt that they were more likely to be motivated in a telecourse. When fall 1999 students were asked to evaluate their motivation to learn, 46%

responded that it was good, and 36% responded that it was excellent. In general, students were satisfied with their telecourse experience as 79% of respondents indicated that they would take another telecourse.

Interaction in Distance Learning Courses

Due to the nature of distance learning courses, it would be reasonable to expect that the amount of interaction between students and faculty would be reduced. In order to determine the impact that distance learning courses have on the interactions, students were asked to compare the opportunity for discussion with faculty and other students in traditionally delivered courses and distance learning courses.

The majority of students who enrolled in on-line courses indicated that an opportunity for on-line discussion with faculty and other students was more likely in the on-line course compared to traditionally delivered courses. Most students also indicated that they were more likely to actually participate in discussion with faculty and other students compared to when they were enrolled in traditional courses. The majority of students enrolled in compressed video courses indicated that there was no difference in the opportunity for discussion with faculty and other students compared to traditional courses. They also indicated that there was no difference in the degree to which they participated in discussions with others. However, students enrolled in telecourses felt that there was less opportunity for discussion compared to traditionally delivered courses. The majority of telecourse students indicated that opportunities for discussion with faculty and other students were less likely. Students also reported that they were less likely to actually participate in discussions with faculty and students when enrolled in a telecourse.

Another concern about distance learning courses is whether or not the students feel as if they are a part of the class. The majority of students enrolled in on-line courses and telecourses indicated that they were less likely to feel as if they were a part of the class compared to traditionally delivered courses. The majority of students enrolled in compressed video courses felt that there was no difference in the degree to which they felt part of the class compared to traditionally delivered courses.

Due to the collaborative nature of learning and the benefits of discussion with faculty and other students with differing viewpoints, increasing the opportunities for discussion in distance learning courses, specifically telecourses, could make these learning experiences more valuable for students. Increasing opportunities for discussion may also allow students to feel more like a part of the class. Feeling a part of the class may allow students to perceive that there is a support system if they have questions or are having difficulty with material. When asked an open-ended question concerning what was least beneficial about taking a distance learning course, many students wrote about the lack of interaction with faculty and other students. Some students indicated that they were unable to ask faculty questions and could not receive answers when questions arose. Other students missed the "classroom environment" and the "interaction with other students." One student wrote that the experience lacked the "necessary interaction with fellow students to communicate and share experiences from lessons and life." A student suggested that distance learning courses could be improved if group discussions were planned for those who were interested. A date and time for the meeting could be scheduled for students interested in discussion of the material. A telecourse student suggested that the instructors "require more class interaction by group research or class meetings more often during the telecourse." This student suggested that a class phone list be created by those interested in discussing the material or needing additional help in learning material.

SUMMARY

The assessment of distance learning programs is essential at this time when the popularity of these programs is increasing. This report focuses on the assessment of three modes of distance learning: telecourses, on-line courses, and compressed video courses. At TCC, enrollments in each of these modes of distance learning varied. Enrollments in telecourses have declined, while enrollments in on-line courses have more than doubled across comparable semesters. Enrollments in compressed video courses have remained relatively stable.

Most students learned about the distance learning course in which they enrolled through the class schedule. Scheduling conflicts or other responsibilities were the reasons given by most students for choosing to enroll in telecourses and on-line courses. The majority of compressed video students indicated that they chose the course because it was the only section available.

Most students were successful in the distance learning courses in which they enrolled. For students in telecourses and on-line courses, there appeared to be a relationship between previous GPA and performance such that a higher previous GPA was associated with more successful outcomes in distance learning courses. However, there appeared to be little relationship between number of credits completed prior to the course and performance in the distance learning course. In general, performance in sequential courses (e.g., English 111/English 112) was consistent. When a student enrolled in a distance learning course that was the first course of a sequence, he or she was generally successful in the second course of the sequence regardless of whether it was a distance learning or traditionally delivered course.

When students were asked to evaluate their experience in distance learning courses, the majority indicated that they were more or equally likely to use written communication and more or equally likely to be motivated in distance learning courses compared to traditionally delivered courses. Additionally, students indicated that they were more likely to use critical thinking in distance learning courses compared to traditional courses. One aspect of distance learning courses that students pointed out as a weakness was the lack of opportunity for interaction with the faculty and other students. However, this was mainly in reference to telecourses. Overall, more than 78% of students in all modes of distance learning indicated that they would enroll in another distance learning course in the same mode.

Appendix A

Compressed Video Distance Learning Student Survey

How did you learn about this course?(check one) ❑ counselor/adviser ❑ class schedule ❑ advertisement ❑ friend ❑ other _____

Why did you choose this course section? ❑ scheduling conflicts ❑ only section available ❑ due to other responsibilities ❑ other _____ ❑ like to work independently

Given your experience in this course, would you take another course of this type? ❑ Yes ❑ No

Instructions: Compare your learning experience in this course to traditionally delivered (classroom courses by checking your response.

	More Likely	No Difference	Less Likely
Opportunity for discussion with faculty	❑	❑	❑
Participation in discussion with faculty	❑	❑	❑
Opportunity for discussion with students	❑	❑	❑
Participation in discussion with students	❑	❑	❑
Attending class	❑	❑	❑
Motivation for learning course content	❑	❑	❑
Using written communication	❑	❑	❑
Using critical thinking	❑	❑	❑
Working hard on assignments	❑	❑	❑
Meeting deadlines in a timely manner	❑	❑	❑
Feeling a part of the class	❑	❑	❑
Enjoying the course	❑	❑	❑

Delivery: Please check your rating of each technology-related or management area.

	Excellent	Good	Fair	Poor
Registration process for the course	❑	❑	❑	❑
Working order of technology needed for the course	❑	❑	❑	❑
Ability to purchase required material conveniently	❑	❑	❑	❑
Ability to purchase required material in a timely manner	❑	❑	❑	❑
Ability to see instructor	❑	❑	❑	❑
Ability to hear instructor	❑	❑	❑	❑
Ability to see other students at other sites	❑	❑	❑	❑
Ability to hear other students at other sites	❑	❑	❑	❑
Readability of all visuals (overheads, instructor's writing, presentations)	❑	❑	❑	❑
Course material delivery in time for class meetings	❑	❑	❑	❑
Legibility of course materials at sites	❑	❑	❑	❑
Use of other technology such as e-mail or a web site	❑	❑	❑	❑

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Appendix B

On-Line/Internet Distance Learning Student Survey

How did you learn about this course?(check one) ❑ counselor/advisor ❑ class schedule ❑ advertisement ❑ friend ❑ other _____

Why did you choose this course section? ❑ scheduling conflicts ❑ only section available ❑ due to other responsibilities ❑ like to work independently ❑ other _____

Given your experience in this course, would you take another course of this type? ❑ Yes ❑ No

Instruction: Compare your learning experience in this course to your learning experience in traditionally delivered (classroom) courses by checking your response.

	More Likely	No Difference	Less Likely
Opportunity for on-line discussion or e-mail with faculty	❑	❑	❑
Participation in on-line discussion or e-mail with faculty	❑	❑	❑
Opportunity for on-line discussion or e-mail with other students	❑	❑	❑
Participation in on-line discussion or e-mail with other students	❑	❑	❑
Motivation for learning course content	❑	❑	❑
Using written communication	❑	❑	❑
Using critical thinking	❑	❑	❑
Working hard on assignments	❑	❑	❑
Meeting deadlines in a timely manner	❑	❑	❑
Feeling a part of the class	❑	❑	❑
Enjoying the course	❑	❑	❑

Delivery: Please check your rating of each technology-related and course management area.

	Excellent	Good	Fair	Poor
Registration process for the course	❑	❑	❑	❑
Working order of technology needed for the course (access to WEB page, college server)	❑	❑	❑	❑
Ability to purchase required material conveniently	❑	❑	❑	❑
Ability to purchase required material in a timely manner	❑	❑	❑	❑

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Appendix C

Telecourse Distance Learning Student Survey – Summer 1998/Spring 1999

How did you learn about this course?(check one) ❑ counselor/advisor ❑ class schedule ❑ advertisement
❑ friend ❑ other _____

Why did you choose this course section? ❑ scheduling conflicts ❑ only section available
❑ due to other responsibilities ❑ other _____
❑ like to work independently

Given your experience in this course, would you take another course of this type? ❑ Yes ❑ No

Instruction: Compare your learning experience in this course to traditionally delivered classroom courses by checking your response

	More Likely	No Difference	Less Likely
Opportunity for discussion with faculty	❑	❑	❑
Participation in discussion with faculty	❑	❑	❑
Opportunity for discussion with students	❑	❑	❑
Participation in discussion with students	❑	❑	❑
Attending class	❑	❑	❑
Motivation for learning course content	❑	❑	❑
Using written communication	❑	❑	❑
Using critical thinking	❑	❑	❑
Working hard on assignments	❑	❑	❑
Meeting deadlines in a timely manner	❑	❑	❑
Feeling a part of the class	❑	❑	❑
Enjoying the course	❑	❑	❑

Delivery: Please check your rating of each technology-related and course management area.

	Excellent	Good	Fair	Poor
Registration process for the course	❑	❑	❑	❑
Working order of technology needed for the course	❑	❑	❑	❑
Ability to purchase required material conveniently	❑	❑	❑	❑
Ability to purchase required material in a timely manner	❑	❑	❑	❑
Ability to access the tapes by television	❑	❑	❑	❑
Ability to access tapes in the campus library	❑	❑	❑	❑
Clarity of tapes	❑	❑	❑	❑
Course material delivery in time for class meeting	❑	❑	❑	❑
Use of other technology such as e-mail or a web site	❑	❑	❑	❑

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Appendix D

Telecourse Distance Learning Student Survey – Fall 1999

Course: «CourseCode» Home College: _____

Gender: ❑ Male ❑ Female

How did you learn about this course? ❑ counselor/advisor ❑ class schedule ❑ advertisement
❑ Internet ❑ friend ❑ other:_____

Why did you choose this course section? ❑ scheduling ❑ preference for distance education
❑ only section available ❑ other_____

Based on your experience in this course, would you take another course of this type? ❑ Yes ❑ No

Please evaluate your experience in this course by checking your response.

	Excellent	Good	Fair	Poor	Not Applicable
...opportunities for interaction with faculty	❑	❑	❑	❑	❑
...opportunities for interaction with students	❑	❑	❑	❑	❑
...registration process for this course	❑	❑	❑	❑	❑
...reliability of TV broadcasts	❑	❑	❑	❑	❑
...availability of videotapes for viewing in a campus library	❑	❑	❑	❑	❑
...checkout process for videotapes	❑	❑	❑	❑	❑
...convenience of purchasing required material	❑	❑	❑	❑	❑
...timeliness of course material delivery	❑	❑	❑	❑	❑
Your...					
...motivation to learn	❑	❑	❑	❑	❑
...use of written communication	❑	❑	❑	❑	❑
...use of critical thinking	❑	❑	❑	❑	❑
...ability to complete assignments	❑	❑	❑	❑	❑
...management of deadlines	❑	❑	❑	❑	❑
...feeling a part of this class	❑	❑	❑	❑	❑
...use of other technology such as e-mail or a web site	❑	❑	❑	❑	❑
...level of satisfaction	❑	❑	❑	❑	❑

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Appendix E

Demographic Information for Students Enrolled in Distance Learning Courses												
	Sum 98		Fall 98		Spring 99		Sum 99		Fall 99		Spring 00	
	#	%	#	%	#	%	#	%	#	%	#	%
Race												
Caucasian	453	71.2	510	67.0	638	66.2	523	70.0	763	69.9	852	69.4
African-Am	131	20.6	181	23.8	249	25.8	171	22.9	240	22.0	276	22.5
Other	52	8.2	70	9.2	77	8.0	53	7.1	89	8.1	100	8.1
Sex												
Male	194	30.5	251	33.0	298	30.9	239	32.0	337	30.9	412	33.6
Female	442	69.5	510	67.0	666	69.1	508	68.0	755	69.1	816	66.4
Age												
16-24	124	19.5	207	27.2	229	23.8	196	26.2	328	30.0	387	31.5
25-31	201	31.6	240	31.5	333	34.5	222	29.7	312	28.6	384	31.3
32-38	151	23.7	156	20.5	204	21.2	172	23.0	240	22.0	239	19.5
39-45	97	15.3	104	13.7	131	13.6	107	14.3	139	12.7	136	11.1
46-52	49	7.7	43	5.7	60	6.2	37	5.0	60	5.5	65	5.3
53+	14	2.2	11	1.4	7	0.7	13	1.7	13	1.2	17	1.4
Classification												
Fresh. AA/AS	241	37.9	340	44.7	404	41.9	261	34.9	460	42.1	492	40.1
Fresh. Diploma	0	0.0	4	0.5	3	0.3	3	0.4	0	0.0	0	0.0
Fresh. Certif.	57	9.0	49	6.4	70	7.3	68	9.1	85	7.8	85	6.9
Unclassified	119	18.7	96	12.6	136	14.1	159	21.3	149	13.6	160	13.0
Fresh. AAS	71	11.2	100	13.1	122	12.7	73	9.8	158	14.5	163	13.3
Soph. AA/AS	95	14.9	116	15.2	159	16.5	119	15.9	160	14.7	209	17.0
Soph. Diploma	0	0.0	0	0.0	0	0.0	0	0.0	3	0.3	0	0.0
Soph. AAS	53	8.3	56	7.4	70	7.3	64	8.6	77	7.1	119	9.7
Financial Aid												
Awarded Aid	284	44.7	379	49.8	497	51.6	309	41.4	533	48.8	629	51.2
No Aid	352	55.3	382	50.2	467	48.4	438	58.6	559	51.2	599	48.8
Total	636		761		964		747		1092		1228	

Appendix F

Number of Enrollments in Compressed Video Courses													
Discipline	Sum 98		Sum 99			Fall 98		Fall 99			Spring 99		Spring 00	
	#	%	#	%		#	%	#	%		#	%	#	%
DMS	12	100	11	33.3		52	69.3	10	12.0		38	67.9	0	0.0
FIR	0	0.0	0	0.0		21	28.0	38	45.8		12	21.4	21	38.2
HIT	0	0.0	0	0.0		0	0.0	26	31.3		0	0.0	26	47.3
HLT	0	0.0	16	48.5		0	0.0	0	0.0		0	0.0	0	0.0
HMS	0	0.0	6	18.2		2	2.7	9	10.8		6	10.7	8	14.5
TOTAL	12		33			75		83			56		55	

Number of Enrollments in On-line Courses													
Discipline	Sum 98		Sum 99			Fall 98		Fall 99			Spring 99		Spring 00	
	#	%	#	%		#	%	#	%		#	%	#	%
ADJ	0	0.0	0	0.0		0	0.0	23	2.9		0	0.0	53	5.2
AST	0	0.0	0	0.0		0	0.0	0	0.0		0	0.0	10	1.0
BIO	0	0.0	0	0.0		0	0.0	0	0.0		0	0.0	29	2.9
BUS	0	0.0	14	4.1		0	0.0	13	1.6		15	3.1	24	2.4
DIT	0	0.0	0	0.0		0	0.0	17	2.1		15	3.1	24	2.4
ECO	0	0.0	44	12.9		0	0.0	46	5.8		34	7.1	69	6.8
EDU	0	0.0	0	0.0		0	0.0	9	1.1		0	0.0	17	1.7
ENG	39	26.7	84	24.7		71	27.0	158	19.9		105	22.0	176	17.4
HIS	0	0.0	0	0.0		0	0.0	96	12.1		0	0.0	101	10.0
HUM	41	28.1	37	10.9		49	18.6	52	6.6		50	10.5	69	6.8
IST	14	9.6	14	4.1		0	0.0	32	4.0		0	0.0	66	6.5
MTH	0	0.0	19	5.6		12	4.6	16	2.0		28	5.9	48	4.7
NAS	52	35.6	71	20.9		53	20.2	89	11.2		87	18.2	111	10.9
PSY	0	0.0	57	16.8		28	10.6	160	20.2		76	15.9	143	14.1
STD	0	0.0	0	0.0		50	19.0	81	10.2		67	14.0	74	7.3
TOTAL	146		340			263		792			477		1014	

Number of Enrollments in Telecourses													
Discipline	Sum 98		Sum 99			Fall 98		Fall 99			Spring 99		Spring 00	
	#	%	#	%		#	%	#	%		#	-%	#	%
ECO	41	7.0	33	6.4		73	12.3	70	12.6		79	12.3	65	12.1
ENG	124	21.3	108	20.9		120	20.2	119	21.4		142	22.2	130	24.1
HIS	190	32.6	178	34.4		171	28.7	147	26.4		175	27.3	128	23.7
PSY	132	22.6	104	20.1		148	24.9	119	21.4		158	24.6	126	23.4
SOC	96	16.5	94	18.2		83	13.9	102	18.3		87	13.6	90	16.7
TOTAL	583		517			595		557			641		539	